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The stability of metal complexes with 8-mercaptoquinoline and alkyl-substituted 8-mercaptoquinolines in dimethylformamide

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Abstract

The stoichiometry and stability constants of 8-mercaptoquinoline and alkyl-8-mercaptoquinoline complexes of Zn(II), Cd(II), Pb(II), Ni(II), Bi(III) and Ag(I) were determined potentiometrically in dimethylformamide. The stability of the 8-mercaptoquinolinates decreases in the order Ag(I) ≫ Bi(III) ≫ Ni(II) ≫ Pb(II) ≫ Cd(II) ≫ Zn(II). Metal 7-methyl-8-mercaptoquinolinates are the most stable. The presence of the alkyl group in the 2-position (which has a steric effect) lowers the strength of metal-ligand bonding. © 1984.